

DRINKING WATER QUALITY REPORT – Calendar Year 2013

U.S. Army Garrison Aberdeen Proving Ground Edgewood Area

Public Water System Identification (PWSID) 012-0010

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Acronyms Used Throughout This Report:

AL.....	Action Level
APG	Aberdeen Proving Ground
DBP.....	Disinfection By-Products
DBPP	DBP Precursors
EPA.....	U.S. Environmental Protection Agency
HAA5.....	Haloacetic Acids
IOC.....	Inorganic Contaminants
L&C.....	Lead and Copper
M&T	Microorganisms and Turbidity
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MDE.....	Maryland Department of the Environment
MRDL.....	Maximum Residual Disinfection Level
N/A	Not Applicable
ND.....	Not Detected
NTU.....	Nephelometric Turbidity Unit
pCi/L.....	picouries per liter
ppb	parts per billion
ppm	parts per million
RAD	Radionuclides
SDWA.....	Safe Drinking Water Act
SOC	Synthetic Organic Compounds
TOC	Total Organic Carbon
TT.....	Treatment Technique
TTHM.....	Total Trihalomethanes
UNREG..	Unregulated Compounds
VOC	Volatile Organic Compounds

Contact Information:

Questions regarding the information contained in this report may be directed to the following:

- **Mr. Kelly Luster**-Public Affairs Office
(410) 278-1147
- **Mr. Richard Wiggins**-Directorate of Public Works, (410) 436-3808

About This Report

Once again, we are proud to present to you our annual drinking water quality report. This is the annual report concerning the quality of water delivered to the Edgewood Area of U.S. Army Garrison Aberdeen Proving Ground (APG) for the period of January 1, 2013 through December 31, 2013 (except where noted). Under the Consumer Confidence Reporting Rule of the Federal Safe Drinking Water Act (SDWA), community water systems are required to report this water quality information to the consuming public. Presented in this report is information regarding the source of our water, its constituents and the health risks associated with any contaminants detected in quantities exceeding a drinking water regulatory maximum contaminant level (MCL), action level (AL) or treatment techniques (TT).

How Can Impurities Get in the Water Supply?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can occur naturally or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides**, which may occur from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and can come from gas stations, urban storm water runoff, and septic systems.
- **Radioactive contaminants**, which can be naturally occurring or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for bottled water, which must provide the same protection for public health.

Consumers should be aware that drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's **Safe Drinking Water Hotline at (800-426-4791)**.

Monitoring of Your Drinking Water

The drinking water being delivered to you is pumped from Winters Run and treated by the Van Bibber Water Treatment Plant located at Building E6110 on Route 755 (Edgewood Road), Edgewood, MD 21040. A source water assessment was completed in 2005 for our source (Winters Run) by the Maryland Department of Environment (MDE). The study found that our source, like most surface water

sources in Maryland, is potentially most susceptible to non-point pollution from agricultural activities and urban stormwater runoff. The source water assessment report is available from MDE's Water Supply Program webpage under Source Water Protection (www.mde.state.md.us/programs/Water/Water_Supply).

Our water system uses only EPA-approved laboratory methods to analyze your drinking water. Our personnel collect water samples from the distribution system and from the Van Bibber Water Treatment Plant. Samples are then shipped to the accredited laboratory where a full spectrum of water quality analyses is performed. The results are reported to MDE. In the Edgewood Area, we monitor for the contaminant groups listed in Table 1 using EPA-approved methods. Table 1 also lists the monitoring frequencies for these contaminant groups.

Definitions

- **Action Level (AL)** - The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.
- **Maximum Contaminant Level (MCL)** - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment technology. Contaminants in drinking water, if detected, must be present in levels below the MCLs in order for the system to be in compliance with state and federal regulations.
- **Maximum Contaminant Level Goal (MCLG)** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety. Please note that MCLGs are goals and not regulatory limits. Public drinking water systems are not required to meet MCLGs.
- **Maximum Residual Disinfectant Level (MRDL)** - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.



- **Maximum Residual Disinfectant Level Goal (MRDLG)** – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.

TABLE 1: Contaminant Groups and Monitoring Frequency

Contaminant Group	Monitoring Frequency
Disinfection By-Products (DBP)	Quarterly
DBP Precursors (DBPP)	Monthly
Inorganic Compounds (IOC)	Once Per Year
Lead and Copper (L&C)	Once Every 3 Years
Microorganisms and Turbidity (M&T)	Daily
Radionuclides (RAD)	Once Every 3 Years
Synthetic Organic Compounds (SOC)	Twice Per Year
Unregulated Contaminants (UNREG)	Once Every 5 Years
Volatile Organic Compounds (VOC)	Once Per Year

APG – Edgewood Area Water Quality Data (Van Bibber Water Treatment Plant)

Table 2 lists the only contaminants detected in the Edgewood Area drinking water distribution system during calendar year 2013 or, in some cases, during the most recent sampling period. We routinely monitor for a number of contaminants in the water supply to meet regulatory drinking water compliance requirements. Table 2 lists only those contaminants that had some level of detection. Your drinking water has been analyzed for many other contaminants as well, but they were not detected in the Edgewood Area drinking water distribution system during 2013 or the most recent sampling period.

TABLE 2: Contaminants Detected in Edgewood Area Drinking Water During Calendar Year 2013

Substances We Detected (Units)	Group	Your Water	What's Allowed? (MCL)	Violation?	Range Detected	What's the Goal? (MCLG)	Typical Source of Contaminant
TTHM (ppb) ¹	DBP	69	80	NO	5.5 – 110	N/A	By-product of drinking water chlorination
HAA5 (ppb) ¹	DBP	63	60	YES	ND – 150	N/A	By-product of drinking water chlorination
TOC (removal ratio) ²	DBP	1.02	TT	NO	1.00 – 1.17	TT	Naturally present in the environment
Arsenic (ppb) ³	IOC	3.4	10	NO	N/A	0	Erosion. Runoff from orchards.
Barium (ppm) ³	IOC	0.032	2	NO	N/A	2	Erosion of natural deposits
Fluoride (ppm) ³	IOC	0.12	4	NO	N/A	4	Water additive to promote strong teeth
Nitrate (ppm) ³	IOC	3.2	10	NO	N/A	10	Runoff from fertilizer use; natural deposits
Selenium (ppm) ³	IOC	11	50	NO	N/A	50	Erosion. Discharge from petroleum refineries.
Lead (ppb) ⁴	L&C	14	15 (AL)	NO	< 2 - 67	0	Corrosion of household plumbing systems
Copper (ppm) ⁴	L&C	0.54	1.3 (AL)	NO	0.01 – 2.8	1.3	Corrosion of household plumbing systems
Total Coliform (presence) ⁵	M&T	1	1 positive sample/ month	NO	absent - present	0	Naturally present in the environment.
Fecal Coliform or <i>E. Coli</i> Bacteria (presence) ⁵	M&T	1		NO	absent - present	0	Naturally present in the environment
Turbidity (NTU) ⁶	M&T	0.20 NTU	TT=1 NTU	NO	N/A	TT	Soil runoff
		100%	TT=% of samples <0.3 NTU				
Chlorine (ppm) ⁹	VOC	2.6	4	NO	0.90 - 4.40	4	Water additive to control microbes

TABLE 2 AND 3 NOTES:

- 1 The highest running annual average detected during 2013 is reported in the "Your Water" column and the range of individual results is presented in the "Range Detected" column.
- 2 Removal of DBPP is monitored by measuring Total Organic Carbon (TOC) before and after treatment and computing a removal ratio. The running annual average ratios for both the Edgewood Area and Harford County systems were in compliance with this Treatment Technique for TOC during all of Calendar Year 2013.
- 3 The detected level of these inorganic contaminants (IOC) is presented in the "Your Water" column. The range of detected levels is presented in the "Range Detected" column (the range of detection is not applicable (N/A) for the Edgewood Area System because IOCs are monitored once per year).
- 4 Compliance for these parameters is demonstrated by comparing the 90th percentile of results to the regulatory Action Level for each parameter. This 90th percentile value is reported to you in the "Your Water" column. This value represents the concentration that ninety percent of the sites (not values) were below during the most recent round of monitoring (2012 for both systems). The range of values detected is presented in the "Range Detected" column.
- 5 Compliance for this parameter is demonstrated by not having greater than one positive sample for the month. When a positive sample occurs, appropriate actions including recollection of samples are taken until the concern is addressed. At the Edgewood Area System in 2013 there were two positive samples out of 114 samples collected, one on 19 July 2013 (that also tested positive for *E. coli*), and one on 12 August 2013. All retests were negative.
- 6 Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Turbidity levels must be below 0.3 NTU in at least 95% of samples collected and never exceed 1 NTU to achieve compliance. For both the Edgewood Area and Harford County systems the percentages reported to you in the "Your Water" column are greater than 95%. The range of turbidity levels in NTU units is presented in the "Range Detected" column.
- 7 The level of these radiological contaminants (RAD) is presented in the "Your Water" column and the range of individual results is presented in the "Range Detected" column. Because these contaminants are monitored once every three years, the range of detections is not applicable.
- 8 The annual average for the detected VOCs and SOCs are presented in the "Your Water" column, with the range of detected levels presented in the "Range Detected" column.
- 9 Chlorine is added to our drinking water to control the presence of microorganisms. The standard by which compliance with chlorine levels is determined is called the Maximum Residual Disinfectant Level (MRDL). The MRDL is the highest level of a disinfectant allowed in drinking water. The annual average chlorine level is presented in the "Your Water" column with the range of detected concentrations presented in the "Range Detected" column. The Maximum Residual Disinfectant Level Goal (MRDLG) is the level of a drinking water disinfectant below which there is no known or expected risk to health.
- 10 The detected level of these unregulated contaminants (UNREG) is presented in the "Your Water" column and the range of detected levels is presented in the "Range Detected" column.

Harford County Water Quality Data



APG is not permitted to withdraw water from Winters Run during periods of low stream flows, as is often the case during drought conditions or during periods of maintenance to the Van Bibber Water Treatment Plant. When source water cannot be pumped from Winters Run, the water supplied to you through the Edgewood Area drinking water distribution system is actually provided by Harford County. In Calendar Year 2013, Harford County provided you with drinking water from 1 October through 31 December, supplying 79.89 million gallons of water. In accordance with the Consumer Confidence Rule, we are required to provide you with water quality data for **ALL** sources of your drinking water. Table 3 lists the contaminants that were detected in Harford County drinking water during Calendar Year 2013. Harford County's annual Water Quality Reports are posted on the County's website at www.harfordcountymd.gov.

TABLE 3: Contaminants Detected in Harford County Drinking Water During Calendar Year 2013

Substances We Detected (Units)	Group	Your Water	MCL	Violation?	Range Detected	MCLG	Typical Source of Contaminant
TTHM (ppb) ¹	DBP	32	80	NO	10 - 49	N/A	By-product of drinking water chlorination
HAA5 (ppb) ¹	DBP	21	60	NO	6 - 33	N/A	By-product of drinking water chlorination
TOC (removal ratio) ²	DBPP	N/A	TT	NO	0.8 - 3.4	TT	Naturally present in the environment
Arsenic (ppb) ³	IOC	0.4	10	NO	ND - 0.5	0	Erosion. Runoff from orchards.
Barium (ppm) ³	IOC	0.06	2	NO	0.03 - 0.11	2	Erosion. Drilling waste & metal refineries.
Beryllium (ppb) ³	IOC	0.04	4	NO	ND - 0.12	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace & defense industries
Cadmium (ppb) ³	IOC	0.04	5	NO	ND - 0.11	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries & paints
Chromium (ppb) ³	IOC	1.2	100	NO	ND - 4.0	100	Erosion. Discharge from steel & pulp mills.

Substances We Detected (Units)	Group	Your Water	What's Allowed? MCL	Violation?	Range Detected	MCLG	Typical Source of Contaminant
Fluoride (ppm) ³	IOC	1.0	4	NO	0.1 - 1.0	4	Erosion. Water treatment additive
Mercury (ppb) ³	IOC	0.08	2	NO	0.05 – 0.10	2	Erosion. Discharge from factories & refineries.
Nitrate (ppm) ³	IOC	4.1	10	NO	1.0 – 4.12	10	Runoff from fertilizer use; natural deposits
Selenium (ppb) ³	IOC	1.1	50	NO	ND – 3.2	50	Erosion. Discharge from petroleum refineries.
Turbidity (NTU) ⁶	M&T	0.28 NTU	TT=1 NTU	NO	N/A	TT	Soil runoff
		100%	TT=% of samples <0.3 NTU				
Gross Alpha (pCi/L) ⁷	RAD	2	15	NO	2	0	Erosion of natural deposits
Gross Beta (pCi/L) ⁷	RAD	4.2	50	NO	4.2	0	Decay of natural and man-made deposits
Radium-226, 228 (pCi/L) ⁷	RAD	1.5	5	NO	1.5	0	Erosion of natural deposits
1,1-Dichloroethene (ppb) ⁸	SOC	0.04	7	NO	ND – 0.08	7	Discharge from industrial chemical factories
Atrazine (ppb) ⁸	SOC	0.1	3	NO	ND – 0.3	3	Runoff from herbicide used on row crops
Di(2-ethylhexyl)adipate (ppb) ⁸	SOC	0.07	400	NO	0.07 – 0.08	400	Discharge from chemical factories
Di(2-ethylhexyl)phthalate (ppb) ⁸	SOC	0.18	6	NO	0.15 - 0.22	0	Discharge from rubber & chemical factories
Ethyl Benzene (ppb) ⁸	SOC	9.3	700	NO	ND – 12.3	700	Discharge from petroleum refineries
Simazine (ppb) ⁸	SOC	0.098	4	NO	0.080 – 0.116	4	Herbicide runoff
Toluene (ppb) ⁸	SOC	0.03	1000	NO	ND – 0.06	1000	Discharge from petroleum factories
Total Xylenes (ppm) ⁸	SOC	0.03	10	NO	ND – 0.06	10	Discharge from petroleum & chemical factories
Trichloroethene (ppb) ⁸	SOC	0.2	5	NO	ND – 0.3	0	Discharge from metal degreasing sites
Chlorine (ppm) ⁹	VOC	3.6	4	NO	0.7 – 3.6	4	Water additive to control microbes
1,3,5-Trimethylbenzene (ppb) ¹⁰	UNREG	1.5	N/A	NO	ND – 2.6	N/A	Solvent used in laboratories & electronic industry
Butylbenzylphthalate (ppb) ¹⁰	UNREG	0.04	N/A	NO	0.03 – 0.04	N/A	Used as a plasticizer for vinyl foams
Chlorate (ppb) ¹⁰	UNREG	285	N/A	NO	60 – 430	N/A	Used in pyrotechnics; naturally occurring
Chromium 6 (ppb) ¹⁰	UNREG	1.3	N/A	NO	ND – 1.3	N/A	Used for chrome plating, dyes, pigments and leather
Cobalt (ppb) ¹⁰	UNREG	0.04	N/A	NO	ND – 0.16	N/A	Used in production of certain high performance alloys
Diethylphthalate (ppb) ¹⁰	UNREG	0.06	N/A	NO	0.05 – 0.07	N/A	Industrial uses include plasticizers, detergent bases & aerosols
Dimethylphthalate (ppb) ¹⁰	UNREG	0.01	N/A	NO	ND – 0.03	N/A	Used in solid rocket propellants, plastics & insect repellents
Di-n-butylphthalate (ppb) ¹⁰	UNREG	0.23	N/A	NO	0.15 – 0.30	N/A	Used as an additive to adhesives or printing inks
Isopropylbenzene (ppb) ¹⁰	UNREG	0.15	N/A	NO	ND – 0.3	N/A	Constituent of crude oil & refined oils
Metolachlor (ppb) ¹⁰	UNREG	0.11	N/A	NO	0.09 – 0.12	N/A	Runoff from herbicide used on crops
Molybdenum (ppb) ¹⁰	UNREG	0.01	N/A	NO	ND – 0.05	N/A	Used as compounds in chemical applications & making alloys
N-propylbenzene (ppb) ¹⁰	UNREG	0.4	N/A	NO	ND – 0.7	N/A	Used to make other chemicals
Nickel (ppb) ¹⁰	UNREG	3.4	N/A	NO	1.6 – 5.8	N/A	Erosion of natural deposits
Perfluorooctanoic Acid (ppb) ¹⁰	UNREG	0.1	N/A	NO	ND – 0.02	N/A	Used as water & oil repellent in fabrics & leather; production of floor waxes
Strontium (ppb) ¹⁰	UNREG	128	N/A	NO	ND – 130	N/A	Used in manufacturing of television cathode ray tubes; refining of zinc; in toothpaste
Vanadium (ppb) ¹⁰	UNREG	0.08	N/A	NO	ND – 0.30	N/A	Used as alloy additive, "ferrovanadium," to improve steels
Contaminant	Group	AL	90th %	Number of Samples >AL		Violation ?	Typical Source
Copper ⁴	L&C	1.3	0.13	0		No	Corrosion of household plumbing systems

(Notes from TABLE 2 also apply to TABLE 3)

Maximum Contaminant Level Violation - Edgewood Area System

Routine testing of the APG Edgewood Area drinking water supply during 2013 showed that water at building E5800 exceeded the State of Maryland MCL for haloacetic acids (HAA5), a disinfection by-product (DBP). The third quarter calendar year (3QCY13) HAA5 running annual average (LRAA) at building E5800 was 63 ppb, exceeding the 60 ppb MCL, measured as a running annual average. To determine HAA5 compliance, a running annual average is calculated using results from the four most recent quarters. APG Edgewood Area is required to test for HAA5 quarterly at two locations - buildings E5800 and E4301.

When 3QCY13 sampling results indicated a potential non-compliance with the HAA5 MCL, Directorate of Public Works (DPW) initiated a switch to Harford County-supplied water in October 2013. The use of Harford County water, which has low DBPs, ensures consumers a safe supply. However, the 4QCY13 annual average result for building E5800 was 61.5 ppb, exceeding the MCL, which led MDE to issue a notice of violation in February 2014.

HAA5 are by-products which are formed when water containing natural organic matter is chlorinated during the water treatment process. The formation of these DBPs at low levels is not unusual and do not pose an immediate health risk. APG Edgewood Area water consumers did not need to take any action following the notice of violation. People who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

The most recent water testing conducted in 1QCY14 indicated that the APG Edgewood Area drinking water met all regulatory requirements and is safe to consume. The APG Edgewood Area water treatment plant is currently undergoing equipment upgrades to help reduce the DBP levels. During this time water is still being purchased from Harford County to ensure an uninterrupted supply of safe drinking water to APG Edgewood Area. Therefore, in April 2013 the water system was restored to compliance for this MCL violation.

Additional Notes Regarding Your Drinking Water

- **Lead**, if present at elevated levels, can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. APG is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the EPA Safe Drinking Water Hotline at (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.
- **Special Precautions:** Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

YOUR WATER IS SAFE TO DRINK

As you can see by the tables in this report, some contaminants were detected in the water provided to you by APG and by Harford County. Your tap water met all U.S. Environmental Protection Agency and state drinking water health standards during Calendar Year 2013, except for the MCL violation for HAA5 as described above.

For more information, please call Mr. Richard Wiggins, DPW at (410) 436-3808. Please share this information with all the other people who drink this water, especially those who may not have received this notice directly. You can do this by posting this notice in a public place or distributing copies by hand or mail.





Directorate of Public Works, Environmental Division
U.S. Army Garrison APG
IMNE APG DWE
Bldg. 4304 Susquehanna Ave.
APG, MD 21005-5001



We want our customers to be informed about their drinking water system. If you have additional questions or concerns, the following APG contacts can be reached by telephone or email.

- **Richard Wiggins** – Directorate of Public Works, Environmental Division
410-436-3808
Richard.j.wiggins6.civ@mail.mil
- **Tony Hale** – Directorate of Public Works, Operation and Maintenance Division
410-436-3102
Anthony.r.hale12.civ@mail.mil
- **Kelly Luster** – Public Affairs Office
410-278-1147
Kelly.c.luster.civ@mail.mil

Other means of communication and community outreach at APG regarding drinking water are as follows:

- Public Works Service Desk – 410-306-1400
- Military Housing, Picerne – 410-305-1706
- Installation Website – www.apg.army.mil with various links under 'Connect with us' to APG on Facebook, Twitter, DoD's Interactive Customer Evaluation (ICE), etc.
- Installation Town Hall Briefings – Held at APG Post Theater and regularly scheduled as announced on APG's website under 'Community'.

Drinking water quality report for APG South (Edgewood) 2013

About This Report

Once again, we are proud to present to you our annual drinking water quality report. This is the annual report concerning the quality of water delivered to the Edgewood Area of U.S. Army Garrison Aberdeen Proving Ground (APG) for the period of Jan. 1, 2013 through Dec. 31, 2013 (except where noted).

Under the Consumer Confidence Reporting Rule of the Federal Safe Drinking Water Act (SDWA), community water systems are required to report this water quality information to the consuming public. Presented in this report is information regarding the source of our water, its constituents and the health risks associated with any contaminants detected in quantities exceeding a drinking water regulatory maximum contaminant level (MCL), action level (AL) or treatment techniques (TT).

How can impurities get in the water supply?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can occur naturally or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may occur from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and can come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for bottled water, which must provide the same protection for public health.

Consumers should be aware that drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 800-426-4791.

Monitoring Your drinking water

The drinking water being delivered to the Edgewood area is pumped from

Winters Run and treated by the Van Bibber Water Treatment Plant located at Building E6110 on Route 755 (Edgewood Road), Edgewood, MD 21040. A source water assessment was completed in 2005 for our source (Winters Run) by the Maryland Department of Environment (MDE). The study found that our source, like most surface water sources in Maryland, is potentially most susceptible to non-point pollution from agricultural activities and urban stormwater runoff. The source water assessment report is available from MDE's Water Supply Program webpage under Source Water Protection www.mde.state.md.us/programs/Water/Water_Supply.

Our water system uses only EPA-approved laboratory methods to analyze your drinking water. Our personnel collect water samples from the distribution system and from the Van Bibber Water Treatment Plant. Samples are then shipped to the accredited laboratory where a full spectrum of water quality analyses is performed. The results are reported to MDE. In the Edgewood Area, we monitor for the contaminant groups listed in Table 1 using EPA-approved methods. Table 1 also lists the monitoring frequencies for these contaminant groups.

Definitions

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those contaminants that had some level of detection. Your drinking water has been analyzed for many other contaminants as well, but they were not detected in the Edgewood Area drinking water distribution system during 2013 or the most recent sampling period.

TABLE 2 AND 3 NOTES:

1. The highest running annual average detected during 2013 is reported in the "Your Water" column and the range of individual results is presented in the "Range Detected" column.

2. Removal of DBPP is monitored by measuring Total Organic Carbon (TOC) before and after treatment and computing a removal ratio. The running annual average ratios for both the Edgewood Area and Harford County systems were in compliance with this Treatment Technique for TOC during all of Calendar Year 2013.

3. The detected level of these inorganic contaminants (IOC) is presented in the "Your Water" column. The range of detected levels is presented in the "Range Detected" column (the range of detection is not applicable (N/A) for the Edgewood Area System because IOCs are monitored once per year).

4. Compliance for these parameters is demonstrated by comparing the 90th percentile of results to the regulatory Action Level for each parameter. This 90th percentile value is reported to you in the "Your Water" column. This value represents the concentration that ninety percent of the sites (not values) were below during the most recent round of monitoring (2012 for both systems). The range of values detected is presented in the "Range Detected" column.

5. Compliance for this parameter is demonstrated by not having greater than one positive sample for the month. When a positive sample occurs, appropriate actions including recollection of samples are taken until the concern is addressed.

At the Edgewood Area System in 2013 there were two positive samples out of 114 samples collected, one on

ACRONYMS:

AL	Action Level
APG	Aberdeen Proving Ground
DBP	Disinfection By-Products
DBPP	DBP Precursors
EPA	U.S. Environmental Protection Agency
HAA5	Haloacetic Acids
IOC	Inorganic Contaminants
L&C	Lead and Copper
M&T	Microorganisms and Turbidity
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MDE	Maryland Department of the Environment
MRDL	Maximum Residual Disinfectant Level
N/A	Not Applicable
ND	Not Detected
NTU	Nephelometric Turbidity Unit
pCi/L	picocuries per liter
ppb	parts per billion
ppm	parts per million
RAD	Radionuclides
SDWA	Safe Drinking Water Act
SOC	Synthetic Organic Compounds
TOC	Total Organic Carbon
TT	Treatment Technique
TTHM	Total Trihalomethanes
UNREG	Unregulated Compounds
VOC	Volatile Organic Compounds

Contact Information:

Questions regarding the information contained in this report may be directed to the following:

- Kelly Luster-Public Affairs Office, 410-278-1147
- Richard Wiggins-Directorate of Public Works, 410-436-3808

TABLE 1: Contaminant Groups and Monitoring Frequency

Contaminant Group	Monitoring Frequency
Disinfection By-Products (DBP)	Quarterly
DBP Precursors (DBPP)	Monthly
Inorganic Compounds (IOC)	Once Per Year
Lead and Copper (L&C)	Once Every 3 Years
Microorganisms and Turbidity (M&T)	Daily
Radionuclides (RAD)	Once Every 3 Years
Synthetic Organic Compounds (SOC)	Twice Per Year
Unregulated Contaminants (UNREG)	Once Every 5 Years
Volatile Organic Compounds (VOC)	Once Per Year

July 19, 2013 (that also tested positive for E. coli), and one on August 12, 2013. All retests were negative.

6. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Turbidity levels must be below 0.3 NTU in at least 95 percent of samples collected and never exceed 1 NTU to achieve compliance. For both the Edgewood Area and Harford County systems the percentages reported to you in the "Your Water" column are greater than 95 percent. The range of turbidity levels in NTU units is presented in the "Range Detected" column.

7. The level of these radiological contaminants (RAD) is presented in

the "Your Water" column and the range of individual results is presented in the "Range Detected" column. Because these contaminants are monitored once every three years, the range of detections is not applicable.

8. The annual average for the detected VOCs and SOCs are presented in the "Your Water" column, with the range of detected levels presented in the "Range Detected" column.

9. Chlorine is added to our drinking water to control the presence of microorganisms. The standard by which compliance with chlorine levels is determined is called the Maximum Residual Disinfectant Level (MRDL). The MRDL is the highest level of a

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TABLE 2: Contaminants Detected in Edgewood Area Drinking Water During Calendar Year 2013

Substances We Detected (Units)	Group	Your Water	What's Allowed? (MCL)	Violation?	Range Detected	What's the Goal? (MCLG)	Typical Source of Contaminant
TTHM (ppb)1	DBP	69	80	NO	5.5 – 110	N/A	By-product of drinking water chlorination
HAA5 (ppb)1	DBP	63	60	YES	ND – 150	N/A	By-product of drinking water chlorination
TOC (removal ratio)2	DBP	1.02	TT	NO	1.00 – 1.17	TT	Naturally present in the environment
Arsenic (ppb)3	IOC	3.4	10	NO	N/A	0	Erosion. Runoff from orchards.
Barium (ppm)3	IOC	0.032	2	NO	N/A	2	Erosion of natural deposits
Fluoride (ppm)3	IOC	0.12	4	NO	N/A	4	Water additive to promote strong teeth
Nitrate (ppm)3	IOC	3.2	10	NO	N/A	10	Runoff from fertilizer use; natural deposits
Selenium (ppm)3	IOC	11	50	NO	N/A	50	Erosion. Discharge from petroleum refineries.
Lead (ppb)4	L&C	14	15 (AL)	NO	< 2 - 67	0	Corrosion of household plumbing systems
Copper (ppm)4	L&C	0.54	1.3 (AL)	NO	0.01 – 2.8	1.3	Corrosion of household plumbing systems
Total Coliform (presence)5	M&T	1	1 positive sample/				
month	NO	absent-present	0	Naturally present in the environment.			
Fecal Coliform or E. Coli Bacteria (presence)5	M&T	1		NO	absent-present	0	Naturally present in the environment
Turbidity (NTU)6	M&T	0.20 NTU 100%	TT=1 NTU TT=% of samples <0.3 NTU	NO	N/A	TT	Soil runoff
Chlorine (ppm)9	VOC	2.6	4	NO	0.90 - 4.40	4	Water additive to control microbes

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disinfectant allowed in drinking water. The annual average chlorine level is presented in the "Your Water" column with the range of detected concentrations presented in the "Range Detected" column. The Maximum Residual Disinfectant Level Goal (MRDLG) is the level of a drinking water disinfectant below which there is no known or expected risk to health.

10. The detected level of these unregulated contaminants (UNREG) is presented in the "Your Water" column and the range of detected levels is presented in the "Range Detected" column.

Harford County Water Quality Data

APG is not permitted to withdraw water from Winters Run during periods of low stream flows, as is often the case during drought conditions or during periods of maintenance to the Van Bibber Water Treatment Plant. When source water cannot be pumped from Winters Run, the water supplied to you through the Edgewood Area drinking water distribution system is actually provided by Harford County.

In Calendar Year 2013, Harford County provided you with drinking water from Oct. 1 through Dec. 31, supplying 79.89 million gallons of water. In accordance with the Consumer Confidence Rule, we are required to provide you with water quality data for ALL sources of your drinking water. Table 3 lists the contaminants that were detected in Harford County drinking water during Calendar Year 2013. Harford County's annual Water Quality Reports are posted on the County's website at www.harfordcountymd.gov.

Maximum Contaminant Level Violation - Edgewood Area System

Routine testing of the APG Edgewood Area drinking water supply during 2013 showed that water at building

E5800 exceeded the State of Maryland MCL for haloacetic acids (HAA5), a disinfection by-product (DBP). The third quarter calendar year (3QCY13) HAA5 running annual average (LRAA) at building E5800 was 63 ppb, exceeding the 60 ppb MCL, measured as a running annual average. To determine HAA5 compliance, a running annual average is calculated using results from the four most recent quarters. APG Edgewood Area is required to test for HAA5 quarterly at two locations - buildings E5800 and E4301.

When 3QCY13 sampling results indicated a potential non-compliance with the HAA5 MCL, The APG Directorate of Public Works (DPW) initiated a switch to Harford County-supplied water in October 2013. The use of Harford County water, which has low DBPs, ensures consumers a safe supply. However, the 4QCY13 annual average result for building E5800 was 61.5 ppb, exceeding the MCL, which led MDE to issue a notice of violation in February 2014.

HAA5 are by-products which are formed when water containing natural organic matter is chlorinated during the water treatment process. The formation of these DBPs at low levels is not unusual and do not pose an immediate health risk. APG Edgewood Area water consumers did not need to take any action following the notice of violation. People who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

The most recent water testing conducted in 1QCY14 indicated that the APG Edgewood Area drinking water met all regulatory requirements and is safe to consume. The APG Edgewood Area water treatment plant is currently undergoing equipment upgrades to help reduce the DBP levels. During this time water is still being purchased from Harford County to ensure an uninterrupted supply of safe drinking water to APG

Edgewood Area. Therefore, in April 2013 the water system was restored to compliance for this MCL violation.

Additional notes regarding your drinking water

• Lead, if present at elevated levels, can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. APG is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the EPA Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.epa.gov/safewater/lead>.

• Special Precautions: Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

Your water is safe to drink

As you can see by the tables in this re-

port, some contaminants were detected in the water provided to you by APG and by Harford County. Your tap water met all U.S. Environmental Protection Agency and state drinking water health standards during Calendar Year 2013, except for the MCL violation for HAA5 as described above.

For more information, please call Richard Wiggins, DPW at 410-436-3808. Please share this information with all the other people who drink this water, especially those who may not have received this notice directly. You can do this by posting this notice in a public place or distributing copies by hand or mail.

We want our customers to be informed about their drinking water system. If you have additional questions or concerns, the following APG contacts can be reached by telephone or email.

• Richard Wiggins – Directorate of Public Works, Environmental Division 410-436-3808; richard.j.wiggins@harfordcountymd.gov

• Tony Hale – Directorate of Public Works, Operation and Maintenance Division 410-436-3102; anthony.r.hale@harfordcountymd.gov

• Kelly Luster – Public Affairs Office 410-278-1147; kelly.c.luster@harfordcountymd.gov

• Other means of communication and community outreach at APG regarding drinking water are as follows:

• Public Works Service Desk – 410-306-1400

• Military Housing, Corvias – 410-305-1706

• Installation Website – www.apg.army.mil with various links under 'Connect with us' to APG on Facebook, Twitter, DoD's Interactive Customer Evaluation (ICE), etc.

• Installation Town Hall Briefings – Held at APG post theater and regularly scheduled as announced on APG's website under 'Community'.

TABLE 3: Contaminants Detected in Harford County Drinking Water During Calendar Year 2013

Substances We Detected (Units)	Group	Your Water	MCL	Violation?	Range Detected	MCLG	Typical Source of Contaminant
THM (ppb)1	DBP	32	80	NO	10 - 49	N/A	By-product of drinking water chlorination
HAA5 (ppb)1	DBP	21	60	NO	6 - 33	N/A	By-product of drinking water chlorination
TOC (removal ratio)2	DBPP	N/A	TT	NO	0.8 - 3.4	TT	Naturally present in the environment
Arsenic (ppb)3	IOC	0.4	10	NO	ND - 0.5	0	Erosion. Runoff from orchards.
Barium (ppm)3	IOC	0.06	2	NO	0.03 - 0.11	2	Erosion. Drilling waste & metal refineries.
Beryllium (ppb)3	IOC	0.04	4	NO	ND - 0.12	4	Discharge from metal refineries and coal-burning facilities; discharge from electrical, aerospace & defense industries
Cadmium (ppb)3	IOC	0.04	5	NO	ND - 0.11	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries & paints
Chromium (ppb)3	IOC	1.2	100	NO	ND - 4.0	100	Erosion. Discharge from steel & pulp mills.
Fluoride (ppm)3	IOC	1.0	4	NO	0.1 - 1.0	4	Erosion. Water treatment additive
Mercury (ppb)3	IOC	0.08	2	NO	0.05 - 0.10	2	Erosion. Discharge from factories & refineries.
Nitrate (ppm)3	IOC	4.1	10	NO	1.0 - 4.12	10	Runoff from fertilizer use; natural deposits
Selenium (ppb)3	IOC	1.1	50	NO	ND - 3.2	50	Erosion. Discharge from petroleum refineries.
Turbidity (NTU)6	M&T	0.28 NTU	TT=1 NTU TT=% of samples <0.3 NTU	NO	N/A	TT	Soil runoff
Gross Alpha (pCi/L)7	RAD	2	15	NO	2	0	Erosion of natural deposits
Gross Beta (pCi/L)7	RAD	4.2	50	NO	4.2	0	Decay of natural and man-made deposits
Radium-226, 228 (pCi/L)7	RAD	1.5	5	NO	1.5	0	Erosion of natural deposits
1,1-Dichloroethene (ppb)8	SOC	0.04	7	NO	ND - 0.08	7	Discharge from industrial chemical factories
Atrazine (ppb)8	SOC	0.1	3	NO	ND - 0.3	3	Runoff from herbicide used on row crops
Di(2-ethylhexyl)adipate (ppb)8	SOC	0.07	400	NO	0.07 - 0.08	400	Discharge from chemical factories
Di(2-ethylhexyl)phthalate (ppb)8	SOC	0.18	6	NO	0.15 - 0.22	0	Discharge from rubber & chemical factories
Ethyl Benzene (ppb)8	SOC	9.3	700	NO	ND - 12.3	700	Discharge from petroleum refineries
Simazine (ppb)8	SOC	0.098	4	NO	0.080 - 0.116	4	Herbicide runoff
Toluene (ppb)8	SOC	0.03	1000	NO	ND - 0.06	1000	Discharge from petroleum factories
Total Xylenes (ppm)8	SOC	0.03	10	NO	ND - 0.06	10	Discharge from petroleum & chemical factories
Trichloroethene (ppb)8	SOC	0.2	5	NO	ND - 0.3	0	Discharge from metal degreasing sites
Chlorine (ppm)9	VOC	3.6	4	NO	0.7 - 3.6	4	Water additive to control microbes
1,3,5-Trimethylbenzene (ppb)10	UNREG	1.5	N/A	NO	ND - 2.6	N/A	Solvent used in laboratories & electronic industry
Butylbenzylphthalate (ppb)10	UNREG	0.04	N/A	NO	0.03 - 0.04	N/A	Used as a plasticizer for vinyl foams
Chlorate (ppb)10	UNREG	285	N/A	NO	60 - 430	N/A	Used in pyrotechnics; naturally occurring
Chromium 6 (ppb)10	UNREG	1.3	N/A	NO	ND - 1.3	N/A	Used for chrome plating, dyes, pigments and leather
Cobalt (ppb)10	UNREG	0.04	N/A	NO	ND - 0.16	N/A	Used in production of certain high performance alloys
Diethylphthalate (ppb)10	UNREG	0.06	N/A	NO	0.05 - 0.07	N/A	Industrial uses include plasticizers, detergent bases & aerosols
Dimethylphthalate (ppb)10	UNREG	0.01	N/A	NO	ND - 0.03	N/A	Used in solid rocket propellants, plastics & insect repellents
Di-n-butylphthalate (ppb)10	UNREG	0.23	N/A	NO	0.15 - 0.30	N/A	Used as an additive to adhesives or printing inks
Isopropylbenzene (ppb)10	UNREG	0.15	N/A	NO	ND - 0.3	N/A	Constituent of crude oil & refined oils
Metolachlor (ppb)10	UNREG	0.11	N/A	NO	0.09 - 0.12	N/A	Runoff from herbicide used on crops
Molybdenum (ppb)10	NREGU	0.01	N/A	NO	ND - 0.05	N/A	Used as compounds in chemical applications & making alloys
N-propylbenzene (ppb)10	UNREG	0.4	N/A	NO	ND - 0.7	N/A	Used to make other chemicals
Nickel (ppb)10	UNREG	3.4	N/A	NO	1.6 - 5.8	N/A	Erosion of natural deposits
Perfluorooctanoic Acid (ppb)10	UNREG	0.1	N/A	NO	ND - 0.02	N/A	Used as water & oil repellent in fabrics & leather; production of floor waxes
Strontium (ppb)10	UNREG	128	N/A	NO	ND - 130	N/A	Used in manufacturing of television cathode ray tubes; refining of zinc; in toothpaste
Vanadium (ppb)10	UNREG	0.08	N/A	NO	ND - 0.30	N/A	Used as alloy additive, "ferrovanadium," to improve steels
Contaminant	Group	AL	90th %	Number of Samples >AL	Violation?	Typical Source	
Copper4	L&C	1.3	0.13	0	No	Corrosion of household plumbing systems	